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May 28, 1993

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Ms. Donna Searcy
Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

Re: PR Docket No. 92-235

Dear Ms. Searcy:

I am transmitting herewith an original and nine copies of
"Comments of The Sport Flyers Association" with respect to the
Notice of Proposed Rulemaking in the above-referenced proceeding

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of

Replacement of Part 90 by Part 88 to
Revise the Private Land Mobile Radio
Services and Modify the Policies
Governing Them

PR Docket No. 92-235

COMMENTS OF THE SPORT FLYERS ASSOCIATION

Jill Abeshouse Stern, Esq.
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2300 N Street, N.W.
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Its Attorney

May 28, 1993

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SUMMARY

As a national aeromodeling organization, The Sport Flyers Association (SFA) strongly opposes the Commission's proposal to create 200 new mobile channels in the 72-76 MHz bands that are now used for remote-controlled model aircraft, boats and cars.

The proposed spacing reductions in the 72-76 MHz bands from 10

75 MHz bands and which will have a significantly interfering impact on R/C operations. There will still be 140 new mobile channels, and a total of about 600 new channels under the Notice's proposals. The specific channels are itemized in the Engineering Statement attached to this filing.

SFA shares the Commission's interest in development of spectrum-efficient R/C technologies. In SFA's view, the best way to accomplish this objective would be to set aside a small number of channels (e.g., five) for innovative R/C technologies. SFA plans to file a separate rulemaking petition proposing the specific rule changes that would be required to accomplish this channel set-aside.

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COMMENTS OF THE SPORT FLYERS ASSOCIATION

The Sport Flyers Association ("SFA"), by its attorneys, submits comments with respect to the Notice of Proposed Rulemaking ("Notice") in PR Docket No. 92-235, which proposes significant regulatory changes in the bands below 512 MHz allocated to the private land mobile radio (PLMR) services. For reasons detailed below, SFA strongly opposes the Notice's proposal to create 200 new mobile channels in the 72-76 MHz bands allocated for remote-controlled (R/C) model devices, including 60 channels that are directly adjacent to the R/C channels. Although these 60 channels will cause devastating interference to modeling activities, there is no demonstrated need or demand for these additional mobile channels and they should be eliminated.

I.
DESCRIPTION OF SFA

SFA is a national aeromodeling membership organization headquartered in Dallas, Texas, with members in all 50 states. SFA members include model aircraft enthusiasts, pilots, flying clubs

and hobby industry manufacturers. SFA serves and promotes the modeling industry through a range of educational, technical and other activities. Benefits available to SFA members include free safety products; discounts on model aviation magazines, flight training, R/C radios and R/C accessories; flying club flight training programs; and liability insurance coverage (individual, club and site owner.)

SFA's activities and operations include the following:

Operation FliteSite. SFA develops and operates aerospace education theme parks known as "FliteSites." These parks are developed jointly with city, state, federal, school and educational authorities and feature mixed-use sites for operators of R/C planes, boats, cars and rockets. Five FliteSite locations are currently under construction with six other locations in pre-development. These mixed-use parks feature plane and rocket rental facilities, a hobby shop, building concessions and educational pavilions for local school involvement.

HobbyLab. HobbyLab is the hobby industry's first product safety engineering, liability testing and R&D facility. HobbyLab serves as a research lab and safety engineering center, and develops new concepts and materials for flying model aircraft that offer either lower cost or easier operation for entry level consumers. HobbyLab employs designers with substantial experience in the aerospace field, and is currently patenting 22 products for use in the hobby industry. HobbyLab's Rocket Glider Series (RGS), developed in conjunction with hobby industry

manufacturers, is designed as a ready-to-fly model airplane for the entry level consumer. The RGS series incorporates fail-safe safety innovation for beginners seeking flight training.

HobbyLab is also committing substantial funding for research and development of advanced digital technology that provides more efficient utilization of the radio spectrum.

FliteSchool. SFA sponsors a variety of educational activities involving aeromodeling. Its FliteSchool program uses aeromodeling to enhance math/science education in grades six through twelve, and also offers an advanced program for universities and colleges. SFA sponsors model airplanes, R/C radios, accessories and curriculum to schools throughout the country.

II. SUMMARY OF SFA'S POSITION

SFA generally endorses the FCC's efforts to revise the PLMR rules, and to stimulate efficient and technologically innovative use of radio spectrum. However, given its extensive involvement in all facets of the model aircraft industry, SFA is strongly concerned about the potential impact of the Notice's proposals on the modeler community. Without doubt, the proposed rule changes will create increased interference to modeling activity in the 72 and 75 MHz bands and could require prohibitively expensive technical changes to or replacement of existing R/C equipment. Yet, there is no valid reason or demonstrated need for the 200 new mobile channels that would be created, nor for the substantial

disruption to R/C activity and enormous costs that would be caused by the proposed rules.

The record in this proceeding already evidences strong concern by the model aircraft community about the Notice's proposal to make 200 frequencies in the 72-76 MHz band available to a General Category Pool through channel splitting. Under this proposal, R/C users in the 72-76 MHz band would be separated from mobile users by only 2.5 kHz instead of 10 kHz. This spacing reduction would have a disastrous effect on the R/C industry, and could create a public safety hazard.

SFA urges the Commission to delete the 60 proposed channels in the 72-76 MHz bands that are directly adjacent to R/C allocations and will have a significantly interfering effect.^{1/} These channels are not needed and should be deleted; there will still be 140 new channels in the 72-76 MHz bands and a total of some 600 new channels created under the Notice's proposals. The 72-76 MHz channels are not suited for low power mobile use; indeed, the wavelength will require an unwieldy antenna of 4 to 8 feet in length. Nor does there appear to be any current or future demand for such use.

Attached hereto as Exhibit 1 is a detailed Engineering Statement prepared by SFA's engineering consultant, Kevin O'Brien of O'Brien Communications. The engineering statement lists the

^{1/} Of these, 50 of the proposed channels will interfere with model aircraft use in the 72 MHz band, and 10 channels will interfere with model surface craft use at 75 MHz.

The typical aeromodeler purchases a model aircraft kit and R/C radio equipment from the local hobby shop. Most aeromodelers enter R/C modeling as a low-cost, educational pastime. Typically, model aircraft kits retail for less than \$150. The modeler will invest several hundred hours in building the model, and will purchase the associated radio transmitter and receiver that is required for R/C operations. The R/C radio equipment may cost as little as \$500, or exceed \$1,000 for more sophisticated equipment. The R/C radio transmitter and receiver may be tuned to a specific frequency or frequencies, or, in more sophisticated and expensive models, will be tuneable to various frequencies.

At the time of purchase, the hobbyist may receive information about and choose to join a local aeromodeling club like SFA or AMA which, among other things, provides insurance coverage and promulgates safety regulations. However, these organizations are voluntary, and approximately 50% of modelers do not belong to any organized flying club.

As is the case with many hobbies, there are different "levels" of aeromodeling. These levels range from the "casual" or "sport flyer" weekend enthusiast to the competitive flyer. There are between 3.5 and 5 million consumers of R/C modeling equipment. Yet, only about 200,000 are members of modeling organizations which provide chartered flying clubs with frequency management. Of these club members, a small percentage (about 6%) are active in competitive events that have strict standards for frequency usage and monitoring of potential interference. It is

important to emphasize that the vast majority of aeromodelers fall into the "sport flyer" category. These sport flyers may operate model aircraft in vacant lots, playgrounds and other available locations.

The important point is that, to date, coordination of model aircraft use with fixed and mobile users in the 72-76 MHz bands has been successfully achieved, and aeromodeling has an extremely high safety record. Despite congestion in the relevant frequency bands, and the unlicensed nature of R/C activity, the industry is self-regulating and is coordinating around existing fixed operations.^{2/}

As discussed below, new interfering signals would be added by the Notice's proposals. Moreover, these would be mobile signals and therefore virtually impossible to coordinate because of the itinerant nature of the use. There are very few mobile users now in the 72-76 MHz bands, and, to date, these users tend to be in limited locations such as a factory or construction site.

^{2/} The Radio Control Radio Services is defined as a "private, one-way, short distance non-voice communications service for the operation of devices at remote locations." Commission Rule 95.201. Under Part 95, individual licensing of R/C devices by the FCC is not required as long as the applicable technical and operational requirements are met.

IV.
THE PROPOSED RULE CHANGES
WILL CREATE SIGNIFICANT NEW
INTERFERENCE TO MODEL AIRCRAFT OPERATIONS

Since 1982, R/C operations have been permitted in the 72 and 75 MHz bands on a secondary basis to TV channels 4 and 5 and to fixed or mobile services in the 72-76 MHz bands. In 1982, the FCC adopted the current regulatory scheme whereby expanded R/C operations are permitted on interlaced, 20 kHz channels in the 72-76 MHz band on a secondary basis.^{3/} A parallel rule in Part 90 provides that radio remote control of models is permitted on frequencies 10 kHz removed from the frequencies authorized for fixed and mobile operations in the 72-76 MHz band, and also specifies that remote control operations are secondary to operation of fixed and mobile stations.^{4/}

Under the existing regulatory scheme, R/C operations have been successfully coordinated with fixed and mobile operations in the relevant bands. In addition, the R/C industry has been moving in the direction of greater spectrum efficiency as the result of the Commission's April 1991 decision requiring a reduction in

^{3/} See Additional Spectrum Between 72 and 76 MHz for Radio Control of Model Aircraft, Boats, Cars and Other Similar Devices, 47 Fed. Reg. 51275 (November 18, 1982). The new spectrum allocation was intended to relieve congestion in the 27 MHz band. While six frequencies at 27 MHz may be used to control any type of model, as a practical matter the 72 MHz frequencies are more desirable for model aircraft operation because of extensive Citizens Band activity at 27 MHz.

^{4/} Rule 90.257(c)

bandwidth and an improved frequency stability for VHF transmitters operating in the 72-76 MHz range.^{5/} This transition to "narrowband" transmitters was proposed in order to reduce the amount of adjacent channel interference and thereby permit more of the available channels to be used simultaneously at major R/C events. The R/C industry is now implementing this change and, in fact, "wideband" transmitters can no longer be sold as of March 1, 1993.

The Notice's proposal to create 200 new mobile channels in the 72-76 MHz bands will create significant new interference to R/C operations. The Notice, released November 6, 1992, does not specifically address R/C stations; nor does it expressly amend Part 95. However, the FCC does propose rule revisions affecting mobile stations operating in the 72-76 MHz bands, that will directly impact model aircraft and surface craft users. In addition, all references to R/C operations will be deleted from Part

95 (see Part 95) if the Notice's proposals are adopted. Thus

proposal, R/C frequencies would be separated from mobile users by only 2.5 kHz instead of 10 kHz, and 20 kHz mobile channels would be replaced with 5kHz channels. The General Category Pool would be available to licensees operating their own radio systems and to private carriers, including public safety, non-commercial and specialized mobile radio users, for either data or voice transmission.

The proposed reduction in spacing, from 10 kHz to 2.5 kHz, in the 72 MHz and 75 MHz bands will create increased interference to R/C operations. As discussed in the attached Engineering Statement (Exhibit 1), there are 60 new channels "which have the potential to cause devastating interference to existing R/C operations." Attached as Attachment ES-1 to the engineering statement (Exhibit 1) is a frequency chart illustrating the relationship between these 60 channels and the currently allocated R/C channels. The entire bandwidth of the R/C channel will be completely overlapped by the occupied bandwidth of the proposed channels. Under these conditions, SFA's engineering consultant concludes that "there is no possibility of interference-free operation on either the R/C channels or on the proposed channels if they are operated at or near the same area."

Informal discussions with FCC Staff indicate a view that interference is unlikely because of the differing areas of operation for the mobiles and R/C devices. As noted in the attached engineering statement, if operation on the proposed channels is

expected to be so limited, it is unclear why it is necessary to allocate 200 such channels.

If greater mobile use of the frequencies should develop, it is likely to be low-power mobile operation, such as a hand-held walkie-talkie. This is the very type of use that is most troublesome to the model aircraft industry. The mobile user is unlikely to be a sophisticated radio operator and the use is likely to be itinerant. These itinerant, unsophisticated users could be located anywhere. These factors will make coordination with model aircraft users extremely difficult, if not impossible.

V.

THERE IS NO NEED OR DEMAND FOR THE 200
ADDITIONAL MOBILE CHANNELS PROPOSED BY THE FCC

While spectrum efficiency is, in general, a laudable goal, there is no public need for the 200 additional mobile channels in the 72-76 MHz bands that would be carved out at the expense of the thriving R/C industry. There are essentially 80 channels available for R/C use (i.e., 50 channels at 72 MHz for model aircraft; 30 channels for surface craft at 75 MHz.) The reality is that no one has sought the 200 additional mobile channels that are proposed in the Notice. There has been no demonstration of need or demand for the new mobile frequencies. In fact, the wavelength of 72-76 MHz requires an over-sized antenna (approximately 4-8 feet in length) that will discourage wide-spread use of portables in these bands, as it has in the past. Indeed,

discussions with manufacturers indicate that there is very little interest in using this band for other than fixed uses.

Under well-established Commission precedent, new spectrum allocations require a strong showing of demand for the new spectrum, particularly where there is an associated dislocation of existing users. For example, in two recent decisions, the Commission decided not to allocate new or additional spectrum where there were inadequate showings of interest or need.^{7/} In contrast, the Commission allocated spectrum in the 216-225 MHz band for narrowband land mobile operation where there was a "clear and demonstrated interest in using this technology," "considerable interest" from the land mobile community and the propagation characteristics were "ideal" for land mobile communications.^{8/}

Here, there is no industry or manufacturer support for the proposed 60 mobile channels adjacent to R/C operations. Moreover, these bands are not well-suited for mobile use, and there is no evidence of future low power mobile requirements in these bands. In fact, VHF spectrum is much better suited for such mobile use. In short, there is no countervailing public demand for the additional mobile spectrum that outweighs the potential disruption to model aircraft operations that would be caused by the proposed rule changes.

^{7/} See Personal Emergency Locator Transmitter Service, 69 R.R. 2d 889 (1991); Basic Exchange Telecommunications Radio Service, 66 R.R. 2d 977 (1989).

^{8/} Allocation of the 216-225 MHz Band, 65 R.R. 2d 219, 223 (1988)

VI.
THE FCC SHOULD SET ASIDE
CHANNELS TO ENCOURAGE INNOVATIVE R/C DESIGNS

SFA endorses the Commission's policy goals of technological innovation and spectrum efficiency. However, as discussed above, there is no demonstrated public need or demand for the additional mobile channels which justifies the dislocation costs to the R/C industry. If the Commission wants to foster innovation and more efficient spectrum usage by R/C devices, SFA suggests that the FCC may want to consider setting aside specific channels for new technologies.

By designating specific channels for innovative uses, the FCC would provide an incentive for future technological development without putting the industry under the artificial deadline that would be imposed by the proposed spacing reduction in PR Docket 92-235.^{9/} Under this approach, any type of modulation scheme would be permitted in the "new technology" channels. This would encourage manufacturers to seek more efficient designs, without imposing a penalty upon the industry and the consumer if such designs cannot be achieved or only at a prohibitive cost.

SFA is currently evaluating which frequencies would be most

rulemaking petition if and as necessary to implement this channel set-aside.

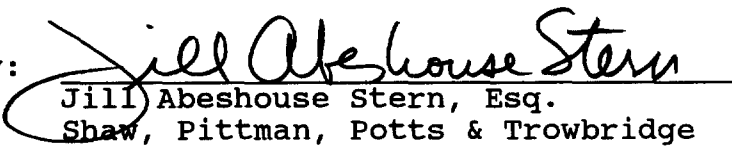
VII.
CONCLUSION

For the foregoing reasons, SFA urges the Commission to delete 60 of the 200 proposed new mobile channels in the 72-76 MHz band. No need or demand for these 60 channels has been shown that justifies the devastating interference and dislocation that would be caused to adjacent to R/C operations. If the Commission's goal is to further spectrum-efficient R/C designs, SFA recommends that specific channels be set aside for technologically innovative R/C devices. SFA plans to submit a rulemaking petition proposing the rule changes that may be required to effectuate this channel set-aside.

Respectfully submitted,

THE SPORT FLYERS ASSOCIATION

By:


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Its Attorney

May 28, 1993

EXHIBIT 1

ENGINEERING STATEMENT OF KEVIN F. O'BRIEN

1. My qualifications to prepare this engineering statement are a matter of record with the Commission. I have submitted testimony in a number of proceedings before the Commission and have been found competent to testify on technical and regulatory matters. I am a 1979 graduate in electrical engineering from Villanova University in Villanova, Pennsylvania. During the past eleven years I have provided detailed technical assistance to manufacturers in the development of equipment standards; been responsible for the design of numerous radio communication systems; and, developed a proprietary propagation model for cellular systems. In addition to my communications experience, I am a Registered Patent Agent and have testified in the United States District Court as an expert in cellular system electronics in patent infringement litigation. I am a past Council member of the Association of Private Carrier Paging (APCP), the nationwide trade association for PCP operators. I have been an invited speaker at several industry trade shows including the Cellular Telecommunications Industry Association (CTIA) annual meeting and the National Association of Business and Educational Radio (NABER) annual meeting. My professional associations include: the National Society of Professional Engineers (NSPE), the Virginia Society of Professional Engineers (VSPE); the Institute of Electrical and Electronics Engineers (IEEE); and, the Vehicular Technology Society of the IEEE.
2. I have been retained by The Sport Flyers Association ("SFA") to conduct an analysis regarding the potential for interference to existing Part 95 Radio Control (R/C) frequencies by the 72-76 channelization plan proposed by the Commission in PR Docket No. 92-235, *Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies and Rules Governing Them*.
3. The Commission has proposed, *inter alia*, in Rule Section 88.907(d), the addition of 200 5 KHz channels in the 72-76 MHz band. Many of these channels are spaced between the existing fixed allocation in that band. These channels are intended for low power (1 Watt) use and would typically be portable, and itinerant in area of operation.
4. R/C channels in the 72-76 MHz band are allocated under Section 95.207 of the Commission's Rules. The 80 channels (8 KHz maximum bandwidth) are interleaved between the fixed operations in the 72-76 MHz band at 10 KHz spacing from the fixed operations and are typically operated at less than 1 watt of power.
5. Under the current regulatory scheme, interference to R/C operations occurs from fixed facilities operating under Parts 22 and 90. The impact of this interference has been minimized however due to several factors; first, the R/C channels are spaced 10 KHz from the nearest fixed channel, thus providing a minimal buffer; second, while fixed operations in this band are allocated 20 KHz channels, typical occupied bandwidth for operations on these channels is only 15-16 KHz; third, R/C operators are able to coordinate their usage around known, fixed operations.
6. The Commission's proposal under Section 88.907(d) includes 60 channels which have the potential to cause devastating interference to existing R/C operations. A frequency chart illustrating the relationship between these 60 channels and the currently allocated R/C channels

is shown in Attachment ES-1. As shown therein, there is a large amount of overlap in the occupied bandwidth of the proposed channels and the existing R/C channels. For example, the occupied bandwidth of one R/C channel and the two adjacent proposed channels is as follows:

R/C Channel 72.03	Occupied Bandwidth 72.026 - 72.034 MHz
Proposed 72.0275	Occupied Bandwidth 72.0250 - 72.030 MHz
Proposed 72.0325	Occupied Bandwidth 72.030 - 72.0350 MHz

The entire bandwidth of the R/C channel is thus completely overlapped by the occupied bandwidth of the proposed channels. Under these conditions, there is no possibility of interference free operation on either the R/C channels or on the proposed channels if they are operated at or near the same area.

7. Conversations with the Commission staff indicate they are well aware that interference will be caused to R/C operations if the proposed channels are operated in the same area as R/C operations. The staff contends however that such interference is unlikely in view of the differing areas of operation. However, if the operation of the proposed low power itinerant channels is expected to be so limited, it is unclear why it is necessary to allocate 200 such channels.

8. Due to the wavelength at 72-76 MHz, this band is not well suited for portable operation in view of the required length of the antenna. Further, discussions with manufacturers indicate there is very little interest in using this band for other than fixed uses. It is therefore not clear why these channels have been proposed, since there has been no specific request for low power mobile use of this band.

9. In order to preclude any possible occurrence of interference to R/C operations, SFA proposes that the 60 channels itemized in Attachment ES-2 be deleted from those proposed under Rule Section 88.907(d). Even with the deletion of those proposed channels, there will be 140 low power, itinerant channels available in the 72-76 MHz band. This is certainly more than enough to accommodate demand well into the 21st century.

11. I have prepared the foregoing Engineering Statement and Attachments, and to the best of my knowledge, information and belief, it is true and correct.

Date: 5-28-93



Kevin F. O'Brien, President
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5051 Rapidan Place
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Facsimile: (703) 642-3478

Relationship Between R/C Allocation and Certain Proposed 72-76 MHz Frequencies

88.907(d) PROPOSAL	R/C ALLOCATION	88.907(d) PROPOSAL
	72.01	72.0125
72.0275	72.03	72.0325
72.0475	72.05	72.0525
72.0675	72.07	72.0725
72.0875	72.09	72.0925
72.1075	72.11	72.1125
72.1275	72.13	72.1325
72.1475	72.15	72.1525
72.1675	72.17	72.1725
72.1875	72.19	72.1925
72.2075	72.21	72.2125
72.2275	72.23	72.2325

Channels to be Deleted From Section 88.907(d) Proposal

72.0125	72.3125
72.0275	72.3275
72.0325	72.3325
72.0475	72.3475
72.0525	72.3525
72.0675	72.3675
72.0725	72.3725
72.0875	72.3875
72.0925	72.3925
72.1075	72.4075
72.1125	72.4325
72.1275	72.4475
72.1325	72.4725
72.1475	72.4875
72.1525	72.5125
72.1675	72.5275
72.1725	72.5525
72.1875	72.5675
72.1925	72.5925
72.2075	72.6075
72.2125	75.4325
72.2275	75.4475
72.2325	75.4725
72.2475	75.4875
72.2525	75.5125
72.2675	75.5275
72.2725	75.5525
72.2875	75.5675
72.2925	75.5925
72.3075	75.6075

EXHIBIT 2